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CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 18 June 2002 with an application for Letters Patent number 519623 made by BODYWORKS INC.

I further certify that pursuant to a claim under Section 24(1) of the Patents Act 1953, a direction was given that the application proceed in the name of SOMAR TECHNOLOGIES LIMITED.

Dated 7 July 2003.

PRIORITY DOCUMENT
SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH
RULE 17.1(a) OR (b)



Neville Harris
Commissioner of Patents

**CERTIFIED COPY OF
PRIORITY DOCUMENT**

519623

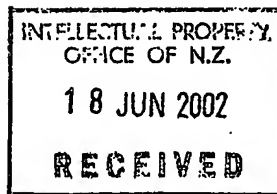
SUBSTITUTION OF APPLICANT
UNDER SECTION 24

NEW ZEALAND

PATENTS ACT 1953

PROVISIONAL SPECIFICATION

"Improvements in and Relating to a Liner"



We, Bodyworks Inc., a United States Corporation, of 981 Park Center Drive, Vista, California 92083, United States of America, hereby declares this invention to be described in the following statement:

This invention relates to a liner particularly a body joint liner such as an ankle brace for human use.

Background of the Invention

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There are a variety of known ankle brace designs of a type frequently known as clam shell ankle braces. These braces consist of a pair of shells with body joint liner inserts so that the construction can be attached to either side of for example the ankle joint. They are frequently fitted following common soft tissue ankle injuries, such as those known as inversion injury or odema (swollen tissue). Following the injury regaining ones health and fitness as quickly as possible is important. A contributing factor which influences the healing process is the ease with which tissue fluid drains from an injury site. Also muscle surrounding the body joint may be damaged and this can affect a person's balance. Existing braces provide a moulded foam liner with a straight channel running up the middle of the liner. This channel provides an area of lesser pressure and so encourages drainage of tissue fluid following the common inversion injury.

Proprioception refers to a sense of position for a body. In the soft tissues around a joint there are "sense of position receptors" which provide information to the brain which then in a reflex fashion instructs muscle to move to control positional movement. Although ligaments stabilise joints in a static sense, it is the dynamic stabilisation of joints achieved by the muscles that cross them, that is primarily in control. After an injury there is proprioceptive lag which makes the ankle more susceptible to a lack of stabilisation because the muscle reflex is less responsive.

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It has been found that many of the known body joint liners fail to achieve satisfactory results in that the healing process which involves the movement of tissue fluids can be too slow and the liner can be too uncomfortable to wear due to high skin pressures.

30 Object of the Invention

It is an object of the present invention to provide a liner which will reduce the foregoing disadvantages in a simple yet effective manner or which will at least provide the public with a useful choice.

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Statement of the Invention

Accordingly in one preferred form of the invention a liner is provided which has an inner face and an outer face, the inner face having therein a channel open at one end
5 and closed at the other end, the channel being substantially of constant width and depth over at least a substantial portion of the length of the channel, and the inner face being shaped to substantially approximate the contours of a selected joint of the human body.

10 Preferably the liner is elongated, the channel running substantially axially along the liner.

Preferably the liner has a concavity therein the closed end of the channel being at or about the concavity.

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Preferably a substantially rigid cover is provided shaped to receive the outer face of the liner.

Preferably the cover and liner are adhered one to the other.

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The invention may also broadly be said to consist in the parts, elements and features referred to or indicated in the specification of the application, individually or collectively, and any or all combinations of any two or more of the said parts, elements or features, and where elements or features are mentioned herein and which have known
25 equivalents in the art to which this invention relates, such known equivalents are deemed to be incorporated herein as if individually set forth.

Brief Description of the Drawings

30 The invention consists of the forgoing and also envisages constructions of which the following gives examples.

One preferred form of the present invention will now be described with reference to the accompanying drawings in which,

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Figure 1 is an inside perspective view of a liner according to one preferred form of the invention,

Figure 2 is a perspective view of the outer face of the liner of figure 1,

Figure 3 is a longitudinal cross section through the liners of figures 1 and 2,

Figure 4 is an internal perspective view of a cover intended for use with the liner of figure 1,

Figure 5 is an external view of the cover of figure 4, and

Figure 6 is a longitudinal cross section view of the cover of figure 4 and 5.

15 Detailed Description of the Drawings

Referring to the drawings, a liner 1 is provided which may be formed of a foamed plastics material so as to provide the necessary "softness" so as not to provide substantial hardness or hard edges against the body of a user.

A channel 2 is provided on the inner face 3 of the liner and the channel is of substantially constant width and depth along its length. However a concavity 4 is provided in the liner 1 shaped so as to be a fit over the inner or outer ankle parts for example of a user. The channel 3 is closed at end 5 and end 5 is positioned substantially at the centre point of the concavity at 4.

In transverse cross section the liner 1 is also desirably formed to a curve that will generally fit against the leg of a user above the ankle joint.

The liner 1 desirably is engaged by a cover 10 which may be formed of a plastics material desirably a hard plastics material. The cover 1 is desirably shaped so that the inner surface 11 thereof will substantially fit the outer surface 12 of the liner 1. Thus the liner 1 may be placed inside the cover and is desirably engaged therewith for example by an adhesive such as glue, double sided tape or the like.

The outer face 13 of the cover 10 may be formed to any desirable shape and may for example include slots 15 and 16 able to receive fixing devices and other constructions such as a depression 17 to allow identification material to be placed therein.

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In use the liner 1 is engaged with a cover 10 and a pair of such constructions may be provided about a users ankle. The construction may be positioned for example by straps or a stocking or in other ways so that the channel 2 has its end 5 adjacent an ankle. The channel 2 provides a channel by which the fluids caused by injury for example may drain away from the injury site adjacent the ankle. As the construction is relatively soft there is little or not effect on the sense of position receptors in the vicinity of and about the ankle which is desirable.

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PIPER KNOWLES
Attorneys for
Bodyworks Inc.

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